

CLAIMS

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1. A stator element for use in a rotating electric machine that is preferably of the transverse flux type,
characterized in that said stator element is constructed having a single
pole piece (1), a single flux-conducting section (2) and a single coil core part (3),
all integral as one solid piece, with the flux-conducting section (2) between the
pole piece (1) and the coil core part (3).
2. The stator element of claim 1,
characterized in that said pole piece (1) has an elongate shape in a di-
rection parallel to the machine axis, with a length approximately twice the length of
the coil core part (3) in the same direction, the flux-conducting section (2) being
perpendicular to the pole piece (1) as well as the coil core part (3), and being atta-
ched to an end of each respective thereof, in such a manner that said pole piece
(1) and said coil core part (3) both point in the same direction.
3. The stator element of claim 1 or 2,
characterized in that said coil core part (3) has an angular span of
 $360^\circ/n$ in the rotation direction, n indicating the number of peripherally juxtaposed
stator elements that together can constitute a complete stator part.
4. The stator element of claim 1, 2 or 3,
characterized in that it is shaped from pressure-formed and heat-treated
iron powder material.
5. A stator part for use in a rotating electric machine that is preferably of the
transverse flux type,
characterized in that it is constituted by a number n of stator elements
of the type indicated in one of claims 1-4, arranged in an annular structure so that
 n parallel pole pieces (1) point finger-like in a direction parallel to the rotation axis
of the machine and are situated radially on the outside or in the inside, while the
corresponding n coil core parts (3) are situated radially on the inside or on the out-
side to constitute together at least part of a coil core, and all n flux-conducting sec-
tions (2) are situated on the same axial side of the coil core.

6. A stator part for use in a rotating electric machine that is preferably of the transverse flux type, comprising an annular structure consisting of

- a coil core ring to support an annular coil (4) with a radial and an axial extent,

- a flux-conducting area extending radially from a coil core ring edge to a radial position somewhat past the radial extent of the coil (4),

- a number n of separate pole pieces (11, 21) extending in an axial direction from the flux-conducting area at said radial position thereof and in a direction back across the coil (4),

characterized in that

- said annular structure (11, 21, 12, 22, 13, 23) is constituted by an assembly of several peripherally juxtaposed and separately manufactured stator elements, each being an integral solid unit having

- at least one pole piece (11, 21),

- one flux-conducting section (12, 22) for every pole piece, all of these n sections (12, 22) constituting together said flux-conducting area, and

- one coil core part (13, 23), said coil core parts (13, 23) laying closely adjacent to each other and constituting together said coil core ring, and in that

- every flux-conducting section (12, 22) is shaped in such a manner that there is a clear opening between neighbouring sections all the way from the coil core part (13, 23) to the pole piece (11, 21).

7. The stator part of claim 6,

characterized in that the pole pieces (11) are arranged radially on the outside, whereby the machine is of the type having an external rotor.

8. The stator part of claim 6,

characterized in that the pole pieces (21) are arranged radially on the inside, whereby the machine is of the type having an internal rotor.

9. The stator part of claim 6, 7 or 8,
characterized in that every stator element is shaped from iron powder
material that is press cast and heat treated.

5 10. A stator for use in a rotating electric machine that is preferably of the trans-
verse flux type, comprising at least one pair of annular stator parts and at least
one coil (4), two stator parts in a pair being arranged axially juxtaposed on the
same axis and having pole pieces (1, 11, 21) pointing in opposite directions and in
between each other in a regular and interleaved manner, so as to form equally
10 large, open flux gaps between all $2n$ pole pieces (1, 11, 21), and the coil (4) being
situated in an annular space formed between the two stator parts in the pair,
characterized in that the stator parts are like and of a type such as sta-
ted in claim 5 or 6, the coil core parts (3, 13, 23) together constituting a core for
the coil (4), insulated from the coil (4) by means of a substantially annular support
15 structure (28) for the stator part.

11. The stator of claim 10,
characterized in that the pole pieces (1, 11) are arranged radially on the
outside, whereby the machine is of the type having an external rotor.

20 12. The stator of claim 10,
characterized in that the pole pieces (21) are arranged radially on the
inside, whereby the machine is of the type having an internal rotor.